

=> d hist

(FILE 'HOME' ENTERED AT 13:27:36 ON 05 JUN 2006)

FILE 'REGISTRY' ENTERED AT 13:27:49 ON 05 JUN 2006

L1	STRUCTURE UPLOADED
L2	95 S L1 FULL
L3	STRUCTURE UPLOADED
L4	148 S L3 FULL

FILE 'CAPLUS' ENTERED AT 13:29:43 ON 05 JUN 2006

L5	129 S L4
L6	8 S L5 AND DYE?
L7	3 S L5 AND LUMIN?

L14 ANSWER 1 OF 1 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2002:506565 CAPLUS

DOCUMENT NUMBER: 138:128326

TITLE: Chemiluminescence in Ozonolysis of Solutions of Fullerene C60

AUTHOR(S): Bulgakov, R. G.; Musavirova, A. S.; Abdrakhmanov, A. M.; Nevyadovskii, E. Yu.; Khursan, S. L.; Razumovskii, S. D.

CORPORATE SOURCE: Academy of Sciences of Bashkortostan, Russian Academy of Sciences, Ufa, 450075, Russia

SOURCE: Journal of Applied Spectroscopy (Translation of Zhurnal Prikladnoi Spektroskopii) (2002), 69(2), 220-225

CODEN: JASYAP; ISSN: 0021-9037

PUBLISHER: Kluwer Academic/Consultants Bureau

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The authors discovered and studied chemiluminescence in ozone-oxidation of the solns. of C60 in toluene, benzene, methylnaphthalene, tetrachloroethane, and CCl4 and photoluminescence of the products of ozonolysis. Irresp. of the nature of a solvent, the chemiluminescence and photoluminescence are attributed to radiation ( $\lambda_{\max}$  = 660 nm at maximum brightness of luminescence) of fullerene polyketones  $O=C60=[O]_m$  ( $m = 1-19$ ). The visually observed fluorescence of polyketones is much brighter than the known fluorescence of C60 and of the majority of its derivs. A hypsochromic shift of the maxima of the chemiluminescence spectra with increase in the time of ozonolysis is discovered, which is associated with decrease in the effect of the system of conjugated C=C bonds of the skeleton of C60 on radiating **chromophore**  $C=O^*$ . Reactions with participation of oxofullerencarbonyloxy, i.e., intermediates of the ozonolysis of fullerene, are presumed as luminous stages of chemiluminescence.

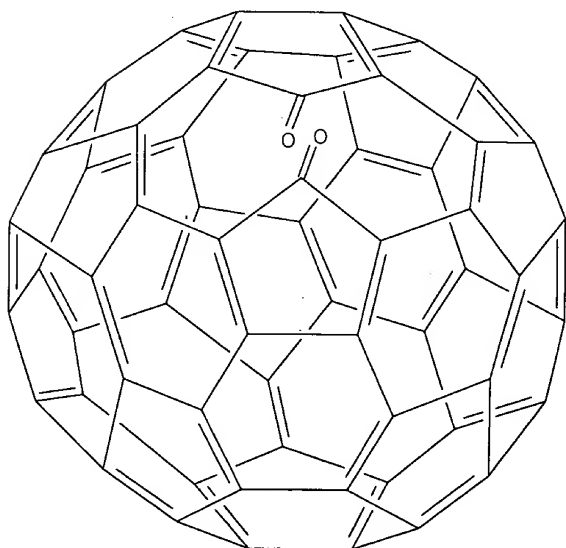
IT 173173-97-2

RL: FMU (Formation, unclassified); PRP (Properties); FORM (Formation, nonpreparative)

(chemiluminescence in ozonolysis of solns. of fullerene C60 with)

RN 173173-97-2 CAPLUS

CN 1,9-Seco[5,6]fullerene-C60-1h-1,9-dione (9CI) (CA INDEX NAME)



L6 ANSWER 1 OF 8 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2004:331637 CAPLUS  
DOCUMENT NUMBER: 140:365374  
TITLE: Organic light-emitting diode devices with improved operational stability  
INVENTOR(S): Jarikov, Viktor V.  
PATENT ASSIGNEE(S): Eastman Kodak Company, USA  
SOURCE: U.S. Pat. Appl. Publ., 108 pp., Cont.-in-part of U.S. Ser. No. 131,801, abandoned.  
CODEN: USXXCO  
DOCUMENT TYPE: Patent  
LANGUAGE: English  
FAMILY ACC. NUM. COUNT: 2  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2004076853	A1	20040422	US 2003-634324	20030805
JP 2003347058	A2	20031205	JP 2003-118497	20030423
CN 1453886	A	20031105	CN 2003-124026	20030424
PRIORITY APPLN. INFO.:			US 2002-131801	B2 20020424

OTHER SOURCE(S): MARPAT 140:365374

AB Organic light-emitting devices which comprise a substrate; an anode and a cathode disposed over the substrate; a luminescent layer disposed between the anode and the cathode are described in which the luminescent layer includes a host and  $\geq 1$  dopant; the host including a solid organic material comprising a mixture of  $\geq 2$  components including a first component that is an organic compound capable of transporting either electrons and/or holes and of forming both monomer state and an aggregate state and a second component of that is an organic compound that upon mixing with the first host component is capable of forming a continuous and substantially pin-hole-free layer, while the dopant of is selected to produce light from the light-emitting device. The first component is capable of forming an aggregate state either in the ground electronic state or in an excited electronic state that results in a different absorption or emission spectrum or both relative to the absorption or emission spectrum or both of the monomer state, resp., or of forming an aggregate state whose presence results in a quantum yield of luminescence of the monomer state being different relative to the quantum yield of luminescence of the monomer state in the absence of the aggregate state. The aggregate state may be crystalline

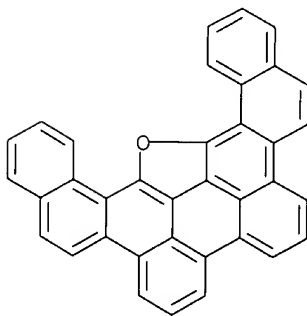
IT 194-45-6, Dinaphtho[1',2':2,3;2'',1'':10,11]perylene[1,12]furan  
239-69-0, Dinaphtho[1,2-b:2',1'-d]furan

RL: DEV (Device component use); USES (Uses)

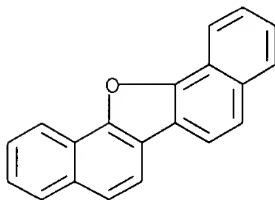
(organic light-emitting diode devices using luminescent mixts.)

RN 194-45-6 CAPLUS

CN Tetrabenzo[1,2:5,6:7,8:11,12]pentapheno[13,14-bcd]furan (8CI, 9CI) (CA INDEX NAME)



RN 239-69-0 CAPLUS  
CN Dinaphtho[1,2-b:2',1'-d]furan (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



L6 ANSWER 2 OF 8 CAPLUS COPYRIGHT 2006 ACS on STN  
ACCESSION NUMBER: 2002:555843 CAPLUS  
DOCUMENT NUMBER: 137:126577  
TITLE: Dibenzoanthraquinone based chromophores as infrared  
**dyes** for inks for jet printing  
INVENTOR(S): Hall, Lachlan Everett; Silverbrook, Kia  
PATENT ASSIGNEE(S): Australia  
SOURCE: U.S. Pat. Appl. Publ., 98 pp., Cont.-in-part of U.S.  
Ser. No. 693,301.  
CODEN: USXXCO  
DOCUMENT TYPE: Patent  
LANGUAGE: English  
FAMILY ACC. NUM. COUNT: 11  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2002096084	A1	20020725	US 2001-928108	20010810
CN 1611363	A	20050504	CN 2004-10095277	20000524
EP 1196752	A1	20020417	EP 2000-938343	20000630
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
US 2002088064	A1	20020711	US 2001-927685	20010810
US 7038066	B2	20060502		
ZA 2002000847	A	20030130	ZA 2002-847	20020130
US 2003094500	A1	20030522	US 2002-291577	20021112
US 6843420	B2	20050118		
US 2005061448	A1	20050324	US 2004-949307	20040927
US 2005064502	A1	20050324	US 2004-986403	20041112
US 2005064503	A1	20050324	US 2004-986404	20041112
PRIORITY APPLN. INFO.:				
			AU 1999-559	A 19990525
			AU 1999-1313	A 19990630
			AU 1999-3632	A 19991025
			AU 2000-9376	A 20000814
			AU 2000-9412	A 20000814
			AU 2000-9509	A 20000818
			AU 2000-9561	A 20000821
			AU 2000-9571	A 20000821
			US 2000-693301	A2 20001020
			AU 1999-3457	A 19991015
			AU 1999-4392	A 19991201
			AU 2000-5829	A 20000224
			US 2000-575154	A1 20000523
			US 2000-575187	A2 20000523
			WO 2000-AU775	W 20000630
			US 2002-291577	A1 20021112
			US 2002-322450	A1 20021219

OTHER SOURCE(S): MARPAT 137:126577

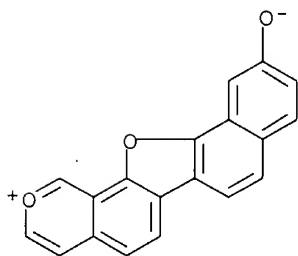
*Same*

AB An IR **dye**, a derivative of dibenzoanthraquinone has an absorption peak in the near IR and a high value of Fratio, that is  $\epsilon_{ratio} > 2$ . Calculated absorption spectra were given for the zwitterionic forms of 8 **dyes**.

IT **400602-18-8**  
 RL: PRP (Properties); TEM (Technical or engineered material use); USES (Uses)  
 (near IR **dyes** for inks for jet printing)

RN 400602-18-8 CAPLUS

CN Naphtho[2',1':4,5]furo[3,2-h]-2-benzopyrylium, 11-hydroxy-, inner salt (9CI) (CA INDEX NAME)



L6 ANSWER 3 OF 8 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2002:142812 CAPLUS

DOCUMENT NUMBER: 136:185327

TITLE: Heterocyclic quinone near-IR **dyes** and printing inks containing them

INVENTOR(S): Hall, Lachlan Everett; Silverbrook, Kia

PATENT ASSIGNEE(S): Silverbrook Research Pty. Ltd., Australia

SOURCE: PCT Int. Appl., 17 pp.  
 CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 11

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2002014435	A1	20020221	WO 2001-AU1001	20010814
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
US 2002088064	A1	20020711	US 2001-927685	20010810
US 7038066	B2	20060502		
AU 2001079502	A5	20020225	AU 2001-79502	20010814
PRIORITY APPLN. INFO.:				
			AU 2000-9376	A 20000814
			AU 2000-9412	A 20000814
			AU 2000-9509	A 20000818
			AU 2000-9561	A 20000821
			AU 2000-9571	A 20000821
			AU 1999-559	A 19990525
			AU 1999-1313	A 19990630
			AU 1999-3632	A 19991025

US 2000-575187 A2 20000523  
US 2000-693301 A2 20001020  
WO 2001-AU1001 W 20010814

OTHER SOURCE(S): MARPAT 136:185327

AB IR **dyes** which absorb strongly in the near-IR region of the spectrum but poorly in the visible region are disclosed. The heterocyclic polycyclic quinone **dyes** are suitable for solvent-based jet printing inks. Calculated spectra for 8 zwitterionic **dyes** were given.

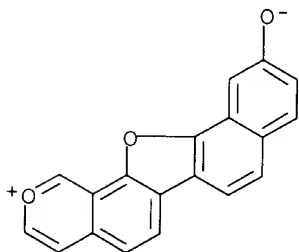
IT **400602-18-8**

RL: PRP (Properties); TEM (Technical or engineered material use); USES (Uses)

(**dye**; heterocyclic quinone near-IR-absorbing **dyes** for inks)

RN 400602-18-8 CAPLUS

CN Naphtho[2',1':4,5]furo[3,2-h]-2-benzopyrylium, 11-hydroxy-, inner salt (9CI) (CA INDEX NAME)



REFERENCE COUNT: 2 THERE ARE 2 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L6 ANSWER 4 OF 8 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1986:63697 CAPLUS

DOCUMENT NUMBER: 104:63697

TITLE: Morphological-functional changes in internal organs under sulfotrinaphthylenefuran intoxication in subacute experiment

AUTHOR(S): Zhukov, V. G.; Pavlovskii, V. A.; Kuz'menko, A. A.; Sharapov, A. V.

CORPORATE SOURCE: USSR

SOURCE: Tr. Krym. Med. In-ta (1984), (102), 134-7

From: Ref. Zh., Toksikol. 1985, Abstr. No. 1175138

DOCUMENT TYPE: Journal

LANGUAGE: Russian

AB Title only translated.

IT **100203-22-3**

RL: ADV (Adverse effect, including toxicity); BIOL (Biological study) (toxicity of)

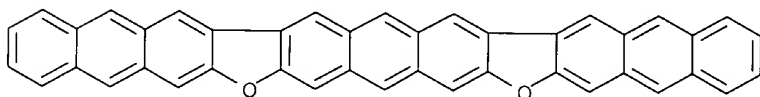
RN 100203-22-3 CAPLUS

CN Trinaphthylene[5,6-bcd]furansulfonic acid (9CI) (CA INDEX NAME)

REFERENCE COUNT: 20 THERE ARE 20 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L13 ANSWER 5 OF 5 CAPLUS COPYRIGHT 2006 ACS on STN  
ACCESSION NUMBER: 2000:167119 CAPLUS  
DOCUMENT NUMBER: 132:200926  
TITLE: Method for fabricating an organic electro-  
**luminescent** device  
INVENTOR(S): Chao, Ching-Ian; Chu, Chun-Hsun; Huang, Dao-Yang;  
Yang, Heng-Long; Pai, Jui-Fen; Tsai, Rung-Ywan; Ho,  
Fang-Chuan  
PATENT ASSIGNEE(S): Industrial Technology Research Institute, Taiwan  
SOURCE: U.S., 13 pp.  
CODEN: USXXAM  
DOCUMENT TYPE: Patent  
LANGUAGE: English  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
-----	----	-----	-----	-----
US 6037190	A	20000314	US 1998-191804	19981113
PRIORITY APPLN. INFO.:			US 1998-191804	19981113
AB	Methods for fabricating full-color organic electroluminescent devices on substrates are described which entail forming a blue-emitting layer on the substrate; performing a first irradiation process to expose a first portion of the emitting layer to form a first pixel on the substrate; performing a second irradiation process to expose a second portion of the emitting layer to form a second pixel on the substrate; and forming a electrode layer on the pixels.			
IT	<b>260060-97-7</b> RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses) (blue-emitting organic electroluminescent device fabrication)			
RN	260060-97-7 CAPLUS			
CN	Dianthra[2,3-d:2',3'-d']anthra[2,3-b:7,6-b']difuran (9CI) (CA INDEX NAME)			



REFERENCE COUNT: 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L12 ANSWER 2 OF 5 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2004:179002 CAPLUS

DOCUMENT NUMBER: 140:391119

TITLE: Selective Preparation of Oxygen-Rich [60]Fullerene Derivatives by Stepwise Addition of tert-Butylperoxy Radical and Further Functionalization of the Fullerene Mixed Peroxides

AUTHOR(S): Huang, Shaohua; Xiao, Zuo; Wang, Fudong; Gan, Liangbing; Zhang, Xiang; Hu, Xiangqing; Zhang, Shiwei; Lu, Mujian; Pan, Qinqi; Xu, Li

CORPORATE SOURCE: Key Laboratory of Bioorganic Chemistry and Molecular Engineering of the Ministry of Education, College of Chemistry and Molecular Engineering, Peking University, Beijing, 100871, Peop. Rep. China

SOURCE: Journal of Organic Chemistry (2004), 69(7), 2442-2453  
CODEN: JOCEAH; ISSN: 0022-3263

PUBLISHER: American Chemical Society

DOCUMENT TYPE: Journal

LANGUAGE: English

OTHER SOURCE(S): CASREACT 140:391119

AB Tert-butylperoxy radicals generated from tert-Bu hydroperoxide (TBHP) and di(acetoxy)iodobenzene add to C60 regio- and chemoselectively to form fullerene peroxides and epoxyfullerene peroxides in moderate yields under various conditions. An epoxyfullerene tetraperoxide is also prepared from cumene hydroperoxide and C60 in the presence of tris(triphenylphosphine)rhodium (III) chloride. Visible **light** irradiation favors epoxide formation; high concns. of tert-butylperoxy radicals favor the production of a fullerene hexaperoxide while low concns. and long reaction times favor the formation of a monoepoxyfullerene tetraperoxide. Fullerene diperoxides are prepared selectively by reaction of C60 with decreased amts. of TBHP. A stepwise addition mechanism for the formation of the fullerene hydroperoxides is proposed involving allylic and cyclopentadienyl fullerene radical intermediates. Meta-chloroperbenzoic acid reacts with a fullerene diperoxide to form a triepoxyfullerene diperoxide and an epoxyfullerene diperoxide. The epoxide C-O bond of the epoxyfullerene tetraepoxide is cleaved by HNO3 and CF3COOH to yield diol derivs. Nucleophilic addition of NaOMe to the epoxyfullerene tetraepoxide follows both unimol. and bimol. ring-opening and substitution mechanisms to yield a mixture of four (tert-butylperoxy)(methoxy)epoxyfullerenols. Irradiation of the fullerene hexaperoxide with visible (incandescent) **light** in the presence of iodine results in partial cleavage of both the C-O and O-O bonds of the peroxide moieties to yield a cage-opened epoxyfullerenedione tetraperoxide. The fullerene derivs. are characterized by NMR spectroscopic data. A (tetra-tert-butylperoxy)(tetramethoxy)(hydroxy)epoxyfullerenedione is crystallized and characterized by X-ray crystallog. The peroxides prepared are potentially explosive and should be handled with caution.

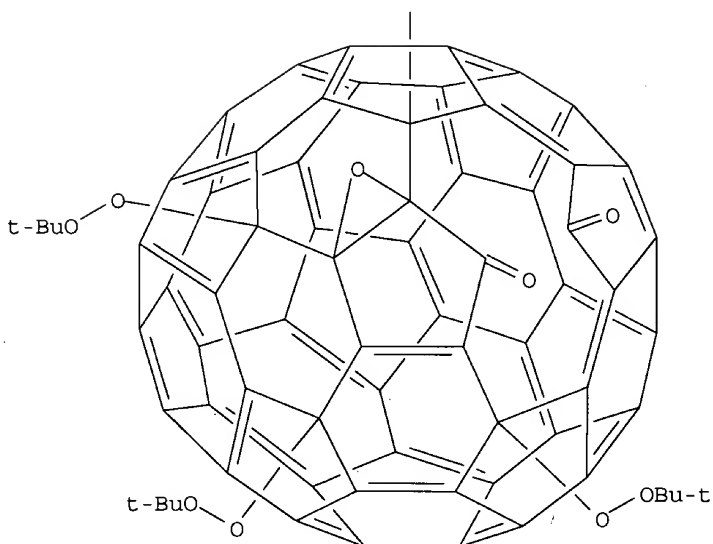
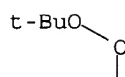
IT 686767-07-7P

RL: SPN (Synthetic preparation); PREP (Preparation)  
(preparation of a cage-opened fullerene by the ring-opening reaction of a fullerene hexaperoxide under visible **light** irradiation in the presence of iodine)

RN 686767-07-7 CAPLUS

CN 1,9-Seco[5,6]fullereno-C60-1h-[2,3-b]oxirene-1,9-dione,  
6,12,15,18-tetrakis[(1,1-dimethylethyl)dioxy]- (9CI) (CA INDEX NAME)





REFERENCE COUNT: 69 THERE ARE 69 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L12 ANSWER 3 OF 5 CAPLUS COPYRIGHT 2006 ACS on STN  
 ACCESSION NUMBER: 2003:909413 CAPLUS  
 DOCUMENT NUMBER: 140:29223  
 TITLE: Desulfurization of Vacuum Gas Oil Based on Chemical Oxidation Followed by Liquid-Liquid Extraction  
 AUTHOR(S): Shiraishi, Yasuhiro; Hirai, Takayuki  
 CORPORATE SOURCE: Research Center for Solar Energy Chemistry and

L6 ANSWER 6 OF 8 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1939:59759 CAPLUS

DOCUMENT NUMBER: 33:59759

ORIGINAL REFERENCE NO.: 33:8603a-d

TITLE: Biaryls and their derivatives. XXI. Oxidation of  $\alpha$ -naphthol

AUTHOR(S): Ioffe, I. S.; Krichevtsov, B. K.

SOURCE: Zhurnal Obshchei Khimii (1939), 9, 1136-42

CODEN: ZOKHA4; ISSN: 0044-460X

DOCUMENT TYPE: Journal

LANGUAGE: Unavailable

AB cf. C. A. 32, 2931.7.  $\alpha$ -Naphthol (25 g.) in 2.5 l. boiling water is oxidized with 500-540 cc. 5% FeCl<sub>3</sub> solution, added dropwise and with stirring at 70-80°, to give a mixture (24 g.) of 4,4'-dihydroxy-1,1'-binaphthyl (I), m. 300°, difficultly soluble in hot benzene, and 1,1'-dihydroxy-2,2'-binaphthyl (II), m. 220°, soluble in hot benzene. I and II with Ac<sub>2</sub>O in pyridine from the di-Ac derivs., m. 217° and 169°, resp. Both I and II form azo **dyes**. I with diazotized p-nitroaniline in alkaline solution gives the 3-azo, dark red and

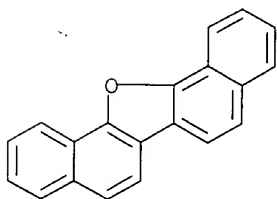
the

3,3'-diazo derivative, dark red, m. above 350°; II gives the 4-azo, red powder, and the 4,4'-diazo compound (III), brick-red, m. above 300°. Of the 4 **dyes** only III, having 2 OH groups ortho to the azo groups, is insol. in alkali. I (5 g.) with 25 g. AlCl<sub>3</sub> heated under anhydrous conditions at 150-160° for 3 hrs. undergoes cyclization with the formation of 3,10-perylenequinone, dark brown, m. 350°, and 3,10-dihydroxyperylene (IV), yellow, m. 227°; di-Bz derivative, m. 295°. IV distilled with Zn dust gives perylene, orange, m. 260°. II with AlCl<sub>3</sub> is recovered unchanged. II (5 g.) with 20 g. ZnCl<sub>2</sub> under anhydrous conditions at 220-50° for 4 hrs. gives 2.5 g. 2,2'-binaphthyl 1,1'-oxide, grayish yellow, m. 182°, unchanged when distilled with Zn dust; picrate, m. 173°. I fused with ZnCl<sub>2</sub> under the same conditions remains unchanged.

IT 239-69-0, Dinaphtho[1,2,2',1']furan 854389-28-9,  
Dinaphtho[1,2,2',1']furan, picrate  
(preparation of)

RN 239-69-0 CAPLUS

CN Dinaphtho[1,2-b:2',1'-d]furan (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



RN 854389-28-9 CAPLUS

CN Dinaphtho[1,2,2',1']furan, picrate (4CI) (CA INDEX NAME)

CM 1

CRN 239-69-0

CMF C20 H12 O

L10 ANSWER 1 OF 4 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1965:41048 CAPLUS

DOCUMENT NUMBER: 62:41048

ORIGINAL REFERENCE NO.: 62:7239f-h

TITLE: A molecular orbital (M.O.) study of naphthothiophenes, naphthobenzothiophenes, and phenanthrobenzothiophenes

AUTHOR(S): Zahradnik, R.; Parkanyi, C.

CORPORATE SOURCE: Ceskoslov. Akad. Ved., Prague

SOURCE: Collection of Czechoslovak Chemical Communications (1965), 30(1), 195-207

CODEN: CCCCAK; ISSN: 0010-0765

DOCUMENT TYPE: Journal

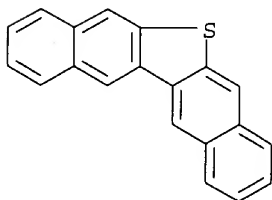
LANGUAGE: Unavailable

AB Naphtho[1,2-b]thiophene, naphtho[2,1-b]thiophene, naphtho[2,3-b]thiophene, phenanthro[9,10-c]thiophene, benzo[b]naphtho-[2,1-d]thiophene, benzo[b]naphtho[2,3-d]thiophene, benzo[b]phenanthro[3,2-d]thiophene, and benzo[b]phenanthro[2,3-d]thiophene were studied by the M.O. method. Excitation energies of the maximum of the 1st intense bands,  $\epsilon_{\text{max}}$ , are linearly related to the theoretical  $N \rightarrow V1$ , transition energies:  $\epsilon_{\text{max}} \text{ (in } 1000 \text{ cm}^{-1}) = 18.882 (N \rightarrow V1) (\beta) + 9.232$ . The slope of this straight line is nearly identical with that of benzenoid hydrocarbons. A similar correlation was found for the charge-transfer bands of the  $\pi$  complexes of the thiophenes with chloranil and tetracyanoethylene. Moreover,  $\pi$ -electron ds., bond orders, free valencies, and exact superdelocalizabilities were calculated. Relations between various theoretical reactivity indexes are discussed and the results of calcs. are compared with exptl. results.

IT 242-53-5, Dinaphtho[2,3-b:2',3'-d]thiophene (mol. orbitals of)

RN 242-53-5 CAPLUS

CN Dinaphtho[2,3-b:2',3'-d]thiophene (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



IT 856302-64-2, Dinaphtho[2,3-b:2',3'-d]thiophene, compound with tetrachloro-p-benzoquinone 859762-93-9, Dinaphtho[2,3-b:2',3'-d]thiophene, compound with ethenetetracarbonitrile (spectrum of)

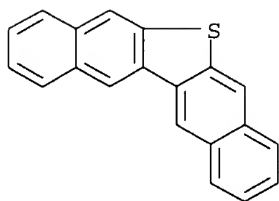
RN 856302-64-2 CAPLUS

CN p-Benzoquinone, tetrachloro-, compd. with dinaphtho[2,3-b:2',3'-d]thiophene (7CI) (CA INDEX NAME)

CM 1

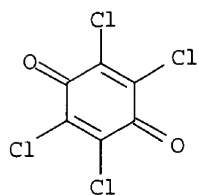
CRN 242-53-5

CMF C20 H12 S



CM 2

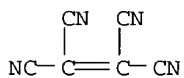
CRN 118-75-2  
CMF C6 C14 O2



RN 859762-93-9 CAPLUS  
CN Ethenetetracarbonitrile, compd. with dinaphtho[2,3-b:2',3'-d]thiophene  
(7CI) (CA INDEX NAME)

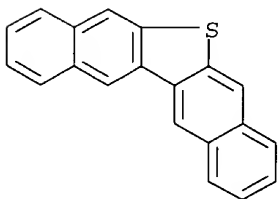
CM 1

CRN 670-54-2  
CMF C6 N4



CM 2

CRN 242-53-5  
CMF C20 H12 S



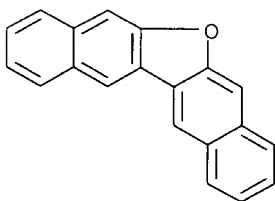
L10 ANSWER 2 OF 4 CAPLUS COPYRIGHT 2006 ACS on STN  
ACCESSION NUMBER: 1961:99388 CAPLUS  
DOCUMENT NUMBER: 55:99388

ORIGINAL REFERENCE NO.: 55:18697g-i,18698a-b  
 TITLE: The synthesis of dinaphtho[2',3'-2,3][2'',3''-4,5]furan  
 AUTHOR(S): Chatterjea, J. N.; Curtis, R. F.; Dhoubhadel, S. P.  
 CORPORATE SOURCE: Sci. Coll., Patna, India  
 SOURCE: Journal of the Chemical Society (1961) 765-7  
 CODEN: JCSOA9; ISSN: 0368-1769  
 DOCUMENT TYPE: Journal  
 LANGUAGE: Unavailable

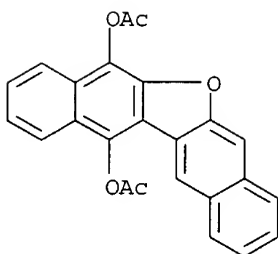
AB cf. CA 49, 4618f. Acid catalyzed decomposition of 2-diazoacetyl-3-methoxynaphthalene gave 5,6-benzocoumaran-3-one (I); oxime m. 212-14°. Treatment of 6.5 g. I in 100 ml. AcOH with 12 g. NaNO<sub>2</sub> and hydrolysis gave 6.2 g. 2-hydroxyimino-5,6-benzocoumaran-3-one, m. 240° (AcOH), 6 g. of which triturated with concentrated HCl gave 2-hydroxy-3-naphthylglyoxylic acid, which was boiled with 15 cc. Ac<sub>2</sub>O to yield 4.1 g. 5,6-benzocoumaran-2,3-dione (II), orange needles, m. 228° (AcOH); quinoxaline derivative, golden needles, m. 330° (decomposition). II (3.5 g.) and 0.45 g. Na in MeOH was refluxed with 3.5 g. BzCH<sub>2</sub>Br 3 hrs. to give 2.2 g. Me 2-benzoyl-5,6-benzocoumarone-3-carboxylate (III), prismatic needles, m. 118-19° (MeOH), hydrolyzed to the acid (IV), yellow prisms, m. 245° (AcOH). IV in 10 ml. C<sub>6</sub>H<sub>6</sub> was heated with 1.2 cc. SOCl<sub>2</sub> to give the acid chloride, which was dissolved in 40 ml. CS<sub>2</sub> and treated with 4 g. AlCl<sub>3</sub>. Hydrolysis, followed by chromatography on Al<sub>2</sub>O<sub>3</sub> and sublimation gave dinaphtho[2',3',-2,3][2'',3''-4,5]furan-1',4'-dione (V), red needles, m. 298-9°; 1',4'-(AcO)<sub>2</sub> derivative m. 272° (AcOH). V (0.05 g.) refluxed with 15 ml. HI 96 hrs. and the mixture diluted gave dinaphtho[2',3'-2,3][2'',3''-4,5]furan (VI), m. 308-10° (C<sub>6</sub>H<sub>6</sub>), subliming at the m.p.; 2,4,7-trinitrofluorenone complex of VI m. 244-6°. The ultraviolet (in EtOH) and **infrared** (in KBr) spectra of VI were recorded. Air oxidation of 2-naphthol in the presence of CaO at 270-320° gave mostly [2',3'-2,3]-[1'',2''-4,5]dinaphthofuran, m. 157° (C<sub>6</sub>H<sub>6</sub>), and a small amount of VI.

IT **242-51-3**, Dinaphtho[2,3-b:2',3'-d]furan **114353-01-4**, Dinaphtho[2,3-b:2',3'-d]furan-5,13-diol, diacetate **124515-31-7**, Dinaphtho[2,3-b:2',3'-d]furan, compound with 2,4,7-trinitrofluoren-9-one (preparation of)

RN 242-51-3 CAPLUS  
 CN Dinaphtho[2,3-b:2',3'-d]furan (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



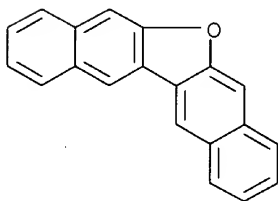
RN 114353-01-4 CAPLUS  
 CN Dinaphtho[2,3-b:2',3'-d]furan-5,13-diol, diacetate (6CI) (CA INDEX NAME)



RN 124515-31-7 CAPLUS  
 CN Dinaphtho[2,3-b:2',3'-d]furan, compd. with 2,4,7-trinitrofluoren-9-one  
 (1:1) (6CI) (CA INDEX NAME)

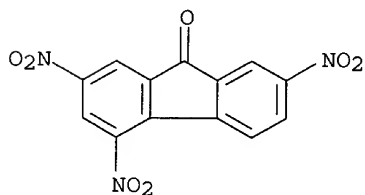
CM 1

CRN 242-51-3  
 CMF C20 H12 O



CM 2

CRN 129-79-3  
 CMF C13 H5 N3 O7



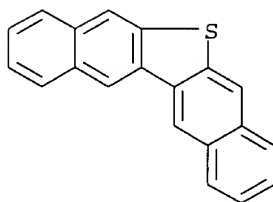
L10 ANSWER 3 OF 4 CAPLUS COPYRIGHT 2006 ACS on STN  
 ACCESSION NUMBER: 1960:21243 CAPLUS  
 DOCUMENT NUMBER: 54:21243  
 ORIGINAL REFERENCE NO.: 54:4154g-h  
 TITLE: Regularities in the **infrared** spectra of  
 polynuclear aromatic compounds in the C-H wagging  
 region  
 AUTHOR(S): Groenewege, M. P.  
 CORPORATE SOURCE: Central Lab., Geleen, Neth.  
 SOURCE: Spectrochimica Acta (1957), (Suppl.), 579-85  
 CODEN: SPACA5; ISSN: 0038-6987  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English

AB From the **infrared** spectra of some 75 polynuclear aromatic compds. it is concluded that the presence of 1, 2, 3, or 4 adjacent H atoms in one 6-membered ring gives rise to strong absorptions in the frequency ranges of 900-860, 860-800, 810-750, and 770-735 cm.<sup>-1</sup>; the names solo, duo, trio, and quartet absorption are proposed for these bands, resp. One or more addnl. bands may appear in aromatic compds. containing polar groups. A few anomalies for pyrene and perylene and perylene and related compds. are cited.

IT **242-53-5**, Dinaphtho[2,3-b:2',3'-d]thiophene  
(spectrum of, adjacent H absorption in)

RN 242-53-5 CAPLUS

CN Dinaphtho[2,3-b:2',3'-d]thiophene (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



L10 ANSWER 4 OF 4 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1959:121945 CAPLUS  
DOCUMENT NUMBER: 53:121945  
ORIGINAL REFERENCE NO.: 53:21844i,21845a-i,21846a-c  
TITLE: Synthesis of 2,3:6,7-dibenzodiphenylene  
AUTHOR(S): Curtis, R. F.; Viswanath, G.  
CORPORATE SOURCE: Johns Hopkins Univ., Baltimore, MD  
SOURCE: Journal of the Chemical Society (1959) 1670-6  
CODEN: JCSOA9; ISSN: 0368-1769  
DOCUMENT TYPE: Journal  
LANGUAGE: Unavailable  
OTHER SOURCE(S): CASREACT 53:121945

AB Synthesis of 2,3:6,7-dibenzodiphenylene (I) from 3-nitro-2-naphthylamine (II) is described. Proof of structure follows from reduction to 2,2'-binaphthyl (III). II was prepared by dehydrogenation of 6-acetamido-1,2,3,4-tetrahydro-7-nitronaphthalene (IV). Attempts to prepare the corresponding 1',1'',2',2'',3',3'',4',4''-octahydro-2,3:6,7-dibenzodiphenylene (V) were unsuccessful; dehydrogenation gave I. Prepn. of 1',1'',2',2'',3',3'',4',4''-octahydro-2,3:6,7-dibenzocarbazole (VI) and dinaphtho-[2',3'-2,3][2'',3''-4,5]furan (VII) is also recorded. When 2-acetamidonaphthalene (150 g.) suspended in Decalin was hydrogenated over 15 g. W-2 Raney Ni in Decalin at 800 lb./sq. in., reaction began at 175° and became complete at 200° in 0.5 hr. This process was repeated and the combined products filtered and steam distilled to remove Decalin. The residue, 200 ml. HCl, and 50 ml. EtOH refluxed 12 hrs., and made alkaline gave an oily layer. The aqueous layer was extracted with Et<sub>2</sub>O, combined with the oil, and distilled to give 14 g. forerun, b<sub>19</sub> 148°, and 165 g. 6-amino-1,2,3,4-tetrahydronaphthalene (VIII), b<sub>19</sub> 148-56°, m. 38°. Acetylation of VIII gave 6-acetamido-1,2,3,4-tetrahydronaphthalene (IX), m. 106° (aqueous alc.). IX nitrated on a 75-g. scale gave satisfactory yields of IV, yellow needles, m. 134-5°. IV (20 g.), 30.4 g. N-bromosuccinimide, and 0.5 g. Bz<sub>2</sub>O<sub>2</sub> in 200 ml. CCl<sub>4</sub> refluxed over a 250-w. **infrared** lamp, the solution heated a further 20 min., and the red mixture filtered hot and concentrated under N gave 26.6 g. 6-acetamido-x,y-dibromo-1,2,3,4-tetrahydro-7-nitronaphthalene (X), yellow needles, m. 134° (CCl<sub>4</sub>). X (16.2 g.)

refluxed 5 min. with 15 g. NaOAc in 150 ml. MeOH and left 12 hrs. at 0° with H<sub>2</sub>O gave 13.2 g. 6-acetamido-x-bromo-x,y-dihydro-7-nitronaphthalene (XI), cream needles, m. 172° (decomposition) (MeOH). XI (13 g.), 100 ml. alc., 50 ml. HCl, and 10 ml. H<sub>2</sub>O refluxed 1 hr. and poured into dilute NH<sub>4</sub>OH gave 6.53 g. II, red needles, m. 115-16° (ligroine). NaNO<sub>2</sub> (4.7 g.) in 30 ml. H<sub>2</sub>SO<sub>4</sub> heated to 70°, cooled to 10°, the solution used to diazotize 12.8 g. II in 150 ml. AcOH and 2 ml. H<sub>2</sub>SO<sub>4</sub> by dropwise addition at 20°, the solution stored 0.5 hr. at room temperature, left 24 hrs. at 0° with 30 g. KI in 80 ml. H<sub>2</sub>O, the solid collected, dissolved in C<sub>6</sub>H<sub>6</sub>, and passed through Al<sub>2</sub>O<sub>3</sub> gave 8.5 g. 2-iodo-3-nitronaphthalene (XII), m. 89-90° (aqueous alc.). XII (1.97 g.) heated 40 min. at 130-5° with 5 g. Cu-bronze powder, extracted with C<sub>6</sub>H<sub>6</sub>, and passed through Al<sub>2</sub>O<sub>3</sub> gave 0.35 g. 3,3'-dinitro-2,2'-binaphthyl (XIII), m. 275° (C<sub>6</sub>H<sub>6</sub>). XIII (1.36 g.) suspended in 50 ml. alc. and 10 ml. AcOH shaken 2 hrs. with 3 g. Raney Ni W-2 under H at 40 lb./sq. in., the product filtered, diluted with 200 ml. H<sub>2</sub>O, saturated with H, and kept 24 hrs. at 0° gave 0.75 g. 3,3'-diamino-2,2'-binaphthyl (XIV), m. 220° (decomposition) (alc.); diacetyl derivative m. 164-5° (AcOH). XIV (0.70 g.) in 15 ml. 6N HCl treated dropwise at 50 with 0.51 g. NaNO<sub>2</sub> in 1 ml. H<sub>2</sub>O, mixture stirred 0.5 hr., then treated with 2 g. KI in 5 ml. H<sub>2</sub>O, N rapidly evolved, and the amorphous solid separated, mixture set aside

0.5

hr., saturated Na<sub>2</sub>SO<sub>3</sub> added, and the solid collected gave 1.03 g. of the iodonium iodide. This compound (350 mg.) mixed with 3.5 g. Cu<sub>2</sub>O and pyrolyzed under 30 mm. vacuum at 350°, this process repeated on 2 further portions, and the combined solid collected in 20 ml. hot C<sub>6</sub>H<sub>6</sub>, filtered, and concentrated gave 15 mg. I, m. 376° (sealed tube) (C<sub>6</sub>H<sub>6</sub>). I sublimed rapidly without melting at 340-5°. Its dilute solution in C<sub>6</sub>H<sub>6</sub> exhibited a strong blue fluorescence,  $\lambda$  6.05, 6.20, 6.66, 6.89, 7.91, 8.07, 8.51, 8.78, 8.84, 9.76, 10.50, 11.39, 13.2, 13.28, 13.45  $\mu$ . I (26.5 mg.) in 35 ml. alc. at 50° shaken 5 min. with 1 g. freshly prepared Raney Ni gave plates, m. 180-3°, which sublimed at 150°/13 mm. and crystallized gave 8 mg. III, m. 184° (alc.). XIII (0.3 g.) in 20 ml. alc. and 5 ml. AcOH hydrogenated 1 hr. at 110° over Raney Ni under H at 150 lb./sq. in. yielded 0.08 g. VI, green-yellow plates, m. 275° (C<sub>6</sub>H<sub>6</sub>),  $\lambda$  2.94, 3.32, 3.41, 3.50, 6.16, 6.78, 6.93, 7.12, 7.47, 7.78, 8.06, 8.58, 8.82, 9.28, 10.42, 10.55, 10.97, 11.75, 12.28, 13.35, 13.47  $\mu$ . XIII (4 g.) suspended in 150 ml. alc. and 30 ml. AcOH shaken with freshly prepared Raney Ni W2 under H at 40 lb./sq. in. until colorless, filtered, diluted with 500 ml. H<sub>2</sub>O, kept under H 24 hrs. at 0°, and the solid collected gave 2.1 g. 3,3'-diamino-5,5',6,6',7,7',8,8'-octahydro-2,2'-binaphthyl (XV), prisms, m. 191-2° (C<sub>6</sub>H<sub>6</sub>). Acid hydrolysis of IV gave 6-amino-1,2,3,4-tetrahydro-7-nitronaphthalene (XVII), m. 125-7°. NaNO<sub>2</sub> (10 g.) in 70 ml. H<sub>2</sub>SO<sub>4</sub> heated to 70°, cooled to 10°, then used to diazotize at 10-15° 25.4 g. XVII in 300 ml. AcOH and 3 ml. H<sub>2</sub>SO<sub>4</sub>, after 0.5 hr. solution added to 60 g. KI in 100 ml. H<sub>2</sub>O, and after 24 hrs. at 0° gave 19 g. 1,2,3,4-tetrahydro-6-iodo-7-nitronaphthalene (XVIII), m. 76° (alc.). XVIII treated at 110-20° over Cu powder and the product chromatographed over Al<sub>2</sub>O<sub>3</sub> gave 5,5',6,6',7,7',8,8'-octahydro-3,3'-dinitro-2,2'-binaphthyl (XIX), m. 192° (AcOH). XIX (0.5 g.) in 25 ml. alc. and 2.5 ml. AcOH reduced over Raney Ni W-2 gave 0.35 g. XV. XV (1.6 g.) in 17 ml. HCl and 17 ml. H<sub>2</sub>O treated 0.5 hr. at 5° with 1.2 g. NaNO<sub>2</sub> in 3 ml. H<sub>2</sub>O, solution poured into 5 g. KI and 10 ml. H<sub>2</sub>O, solid washed with aqueous Na<sub>2</sub>SO<sub>3</sub>, and MeOH, and dried gave 2.1 g. salt. Pyrolysis of 0.35 g. of this salt with 3.5 g. Cu<sub>2</sub>O under the same conditions as for I gave a product which was combined with those from 4 similar runs. The combined material gave 0.26 g. I. XV (1.45 g.) diazotized in the usual way giving 2.45 g. of the iodonium iodide, which pyrolyzed in 7 portions of 0.35 g. each, with 3.5 g. Cu<sub>2</sub>O and the combined products yielded 70 mg. VII, yellow plates, m. 266° (C<sub>6</sub>H<sub>6</sub>) (subliming at the m.p.); 2,4,7-trinitrofluorenone complex formed deep purple brown needles, m. 244-6° (C<sub>6</sub>H<sub>6</sub>),  $\lambda$  6.18, 6.28, 6.69, 6.84, 7.24, 7.50, 7.86,

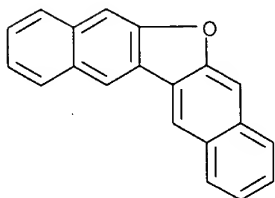


8.29, 8.39, 8.81, 9.35, 9.69, 9.85, 10.45, 11.41, 11.85, 13.04, 13.32, 13.54  $\mu$ . The ultraviolet spectrum of I was compared with those for 1,2-benzodiphenylene and 1,2-7,8-dibenzodiphenylene.

IT 242-51-3, Dinaphtho[2,3-b:2',3'-d]furan 124515-31-7, Fluoren-9-one, 2,4,7-trinitro-, compound with dinaphtho[2,3-b:2',3'-d]furan (preparation of)

RN 242-51-3 CAPLUS

CN Dinaphtho[2,3-b:2',3'-d]furan (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



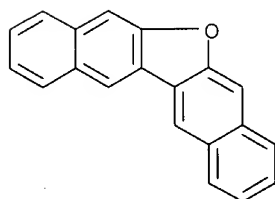
RN 124515-31-7 CAPLUS

CN Dinaphtho[2,3-b:2',3'-d]furan, compd. with 2,4,7-trinitrofluoren-9-one (1:1) (6CI) (CA INDEX NAME)

CM 1

CRN 242-51-3

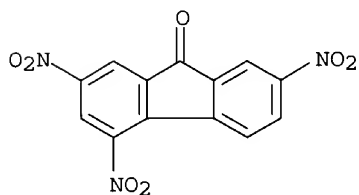
CMF C20 H12 O



CM 2

CRN 129-79-3

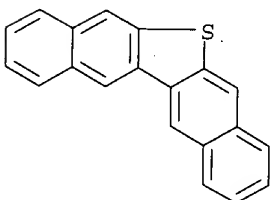
CMF C13 H5 N3 O7



Division of Chemical Engineering, Graduate School of  
Engineering Science, Osaka University, Toyonaka,  
560-8531, Japan  
SOURCE: Energy & Fuels (2004), 18(1), 37-40  
CODEN: ENFUEM; ISSN: 0887-0624  
PUBLISHER: American Chemical Society  
DOCUMENT TYPE: Journal  
LANGUAGE: English

AB Desulfurization of vacuum gas oil (VGO) was investigated based on chemical oxidation of sulfur-containing compds. using H<sub>2</sub>O<sub>2</sub> and acetic acid (AcOH), followed by extraction of the oxidized compds. from the resulting VGO using an aqueous acetonitrile solution. The desulfurization behavior of VGO was compared with that of **light** oil feedstocks, and the reactivities of the individual sulfur compds. in VGO were studied by field ionization-mass spectrometry (FI-MS) anal. By use of the desulfurization process, the sulfur content of the VGO was decreased successfully to <11% of the corresponding feed values, and the desulfurization yield of the VGO was significantly higher than that of **light** oils. This is because polyarom. thiophenes in the VGO that possess at least one naphthenic ring adjacent to the thiophenic ring have higher electron d. on the sulfur atom than the sulfur compds. contained in **light** oils, and are oxidized more effectively.

IT 242-53-5, Dinaphtho[2,3-b:2',3'-d]thiophene  
RL: PRP (Properties); REM (Removal or disposal); PROC (Process)  
(calculated electron d. in; desulfurization of vacuum gas oil based on chemical oxidation followed by liquid-liquid extraction)  
RN 242-53-5 CAPLUS  
CN Dinaphtho[2,3-b:2',3'-d]thiophene (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)

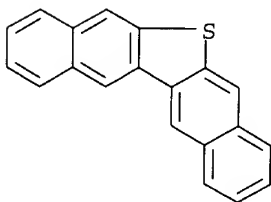


REFERENCE COUNT: 11 THERE ARE 11 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

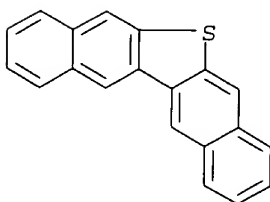
L12 ANSWER 4 OF 5 CAPLUS COPYRIGHT 2006 ACS on STN  
ACCESSION NUMBER: 1975:608269 CAPLUS  
DOCUMENT NUMBER: 83:208269  
TITLE: Organic sulfur compounds in coal hydrogenation products  
AUTHOR(S): Akhtar, Sayeed; Sharkey, A. G., Jr.; Shultz, J. L.; Yavorsky, P. M.  
CORPORATE SOURCE: Bur. Mines, Pittsburgh, PA, USA  
SOURCE: Preprints of Papers - American Chemical Society, Division of Fuel Chemistry (1974), 19(1), 207-14  
CODEN: ACFPAI; ISSN: 0569-3772  
DOCUMENT TYPE: Journal  
LANGUAGE: English

AB Coals were hydrogenated at 450° and 4000 psi and the products separated into **light** and heavy oils, asphaltenes, and C<sub>6</sub>H<sub>6</sub>-insol. fractions. In the oils and asphaltenes were found 14 S compds., 13 of these being thiophene derivs. In hydrodesulfurization of these products over the Synthoil catalyst, 3 of the S compds. were relatively stable, but the other 11 disappeared during the first pass.  
IT 242-53-5 57454-20-3

RL: USES (Uses)  
(in coal hydrogenation products)  
RN 242-53-5 CAPLUS  
CN Dinaphtho[2,3-b:2',3'-d]thiophene (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



RN 57454-20-3 CAPLUS  
CN Dinaphtho[2,3-b:2',3'-d]thiophene, methyl- (9CI) (CA INDEX NAME)



D1-Me

L12 ANSWER 5 OF 5 CAPLUS COPYRIGHT 2006 ACS on STN  
ACCESSION NUMBER: 1971:496680 CAPLUS  
DOCUMENT NUMBER: 75:96680  
TITLE: Association between photodynamic and enzyme-inducing activities in polycyclic compounds  
AUTHOR(S): Epstein, Samuel S.; Buu-Hoi, N. P.; Do-Phouc Hien  
CORPORATE SOURCE: Lab. Environ. Toxicol. Carcinog., Child. Cancer Res. Found., Inc., Boston, MA, USA  
SOURCE: Cancer Research (1971), 31(8), 1087-94  
CODEN: CNREA8; ISSN: 0008-5472  
DOCUMENT TYPE: Journal  
LANGUAGE: English  
GI For diagram(s), see printed CA Issue.  
AB A comparative study of the photodynamic activities of 240 polycyclic compds., determined with Paramecium caudatum, and their in vivo enzyme-inducing capacity for xoxazolamine hydroxylase in rats demonstrated a highly significant association between these two activities. Compds. with high photodynamic activity such as 7-bromobenz[a]anthracene (I), benz[a]anthracene, and 3-methylbenz[a]anthracene were 10-fold more effective enzyme inducers than compds. with low photodynamic activity such as 7,12-diphenylbenz[a]anthracene (II).  
IT **242-51-3**  
RL: BIOL (Biological study)  
(enzyme induction by, photodynamic activity in relation to)  
RN 242-51-3 CAPLUS  
CN Dinaphtho[2,3-b:2',3'-d]furan (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)